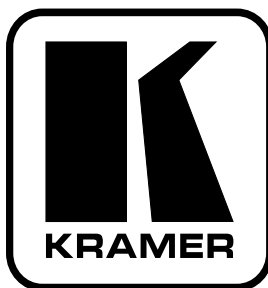# Kramer Electronics, Ltd.

USER MANUAL

Models:

VM-5ARII, *Video Audio Distribution Amplifier*

VM-20ARII, *1:20 Programmable Video Audio Distributor*

VM-1411, *1:10 Video/Audio Distributor*

Contents

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1   Introduction

Welcome to Kramer Electronics! Since 1981, Kramer Electronics has been providing a world of unique, creative, and affordable solutions to the vast range of problems that confront the video, audio, presentation, and broadcasting professional on a daily basis. In recent years, we have redesigned and upgraded most of our line, making the best even better! Our 1,000-plus different models now appear in 11 groups[1] that are clearly defined by function.

Thank you for purchasing the Kramer **VM-5ARII, VM-20ARII, VM-1411** *Video Distribution Amplifiers,* which are ideal for:

- Any professional A/V system requiring a compact, high-quality DA
- Retail stores and other point-of-sale display systems
- Security and CCTV applications
- Studio RGB/YUV distribution

Each package includes the following items:

- The **VM-5ARII, VM-20ARII, or VM-1411** *Distributor*
- Power cord[2]
- This user manual[3]

2   Getting Started

We recommend that you:

- Unpack the equipment carefully and save the original box and packaging materials for possible future shipment
- Review the contents of this user manual
- Use Kramer high-performance high-resolution cables[4]

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1 GROUP 1: Distribution Amplifiers; GROUP 2: Switchers and Matrix Switchers; GROUP 3: Control Systems; GROUP 4: Format/Standards Converters; GROUP 5: Range Extenders and Repeaters; GROUP 6: Specialty AV Products; GROUP 7: Scan Converters and Scalers; GROUP 8: Cables and Connectors; GROUP 9: Room Connectivity; GROUP 10: Accessories and Rack Adapters; GROUP 11: Sierra Products

2 We recommend that you use only the power cord supplied with this device

3 Download up-to-date Kramer user manuals from our Web site at http://www.kramerelectronics.com

4 The complete list of Kramer cables is on our Web site at http://www.kramerelectronics.com

To achieve the best performance:

- Use only good quality connection cables[1] to avoid interference, deterioration in signal quality due to poor matching, and elevated noise levels (often associated with low quality cables).

- Avoid interference from neighboring electrical appliances that may adversely influence signal quality and position your Kramer product away from moisture, excessive sunlight and dust

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1 Available from Kramer Electronics on our Web site at http://www.kramerelectronics.com

KRAMER: SIMPLE CREATIVE TECHNOLOGY

2.1 Quick Start

This quick start chart summarizes the basic setup and operation steps.
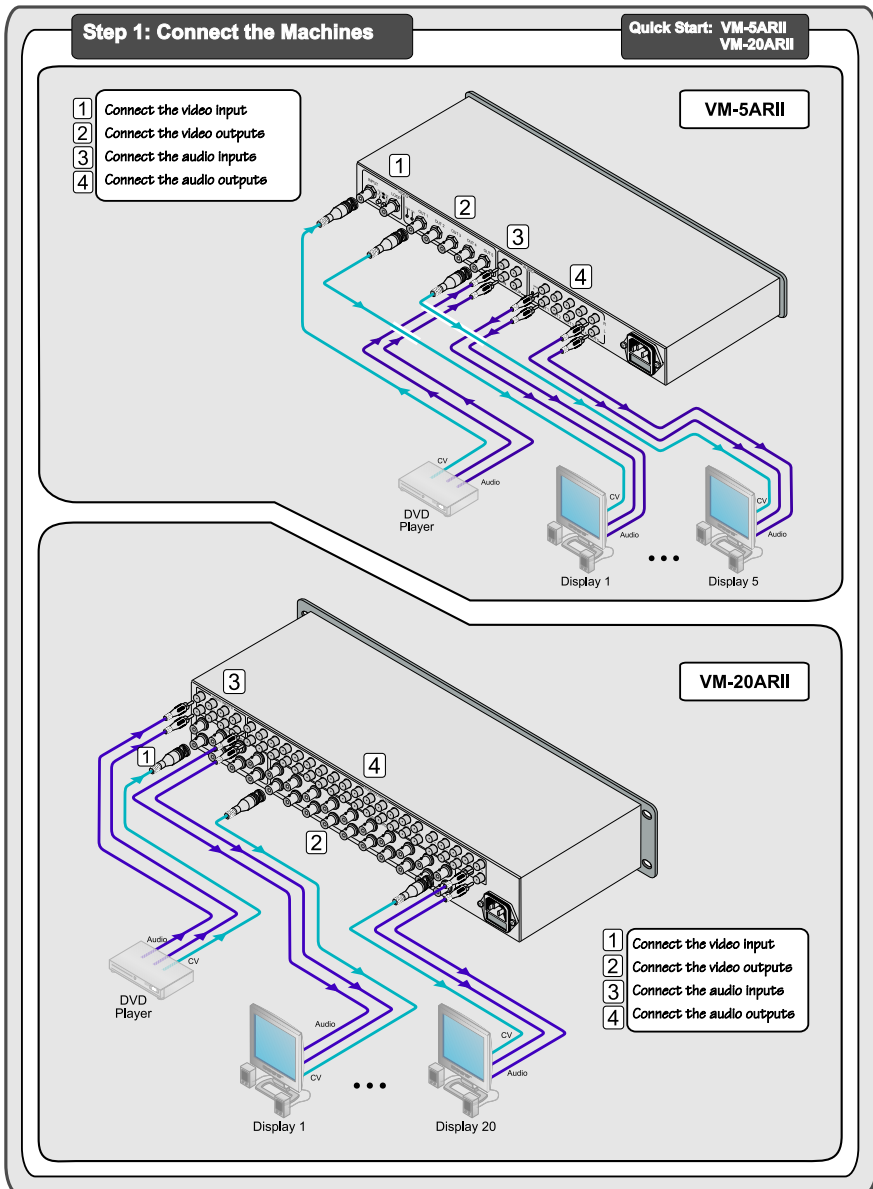
Step 1: Connect the Machines

Quick Start: VM-1411

VM-1411

1 Connect the video inputs
2 Connect the video outputs
3 Connect the audio inputs
4 Connect the audio outputs

Audio connections
are not shown

Display A1

DVD
Player A

CV

CV

Display A5

DVD
Player B

CV

Display B1

CV

Display B5

CV
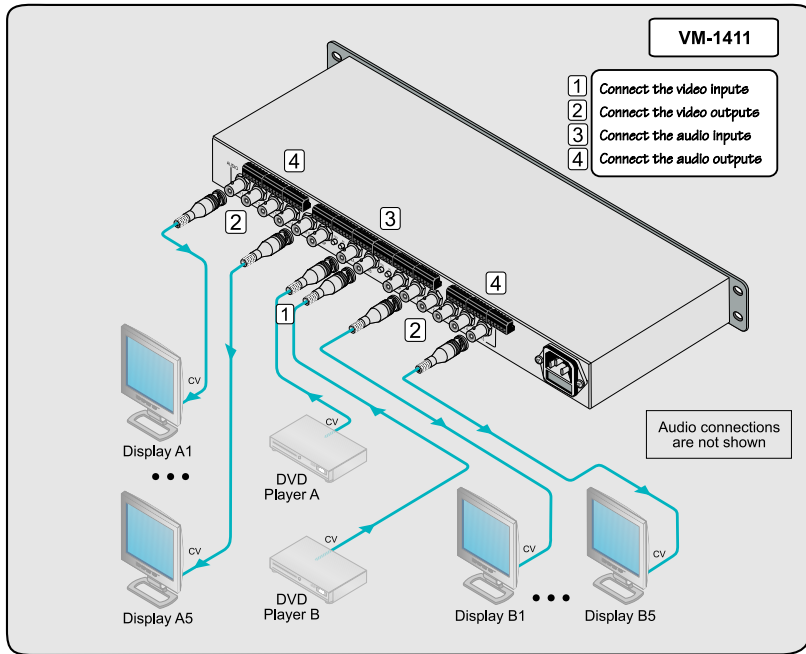
Step 2: Connect the power

Step 3: Adjust and set the mode of operation - see Section 6

○ Adjust the EQ. and LEVEL

○ Set mode of operation

VM-5ARII

VIDEO   AUDIO

GAIN   EQ   GAIN
                  R   L

VM-1411

A
L   AUDIO
R

EQ.   LEVEL

VIDEO

VM-20ARII

OUT 1-5
L   R
GAIN

STEREO
BAL

OUT 1-5
EQ.   GAIN

VM-20ARII

AUDIO
1:20   2x1:10 4x1:5   1:10+
2x1:5

VIDEO
1:20   2x1:10 4x1:5   1:10+
2x1:5

VM-1411

2x1:5
1:10
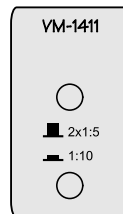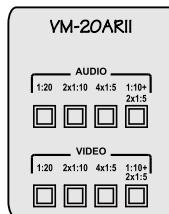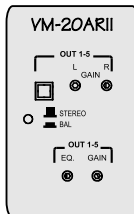
3   Overview

This section gives an overview of the:

- **VM-5ARII** *Video Audio Distribution Amplifier*, see section 3.1
- **VM-20ARII** *1:20 Programmable Video Audio Distributor*, see section 3.2
- **VM-1411** *1:10 Video/Audio Distributor*, see section 3.3

3.1   The VM-5ARII Video Audio Distribution Amplifier

The Kramer **VM-5ARII** is a high-performance distribution amplifier for composite or SDI video and unbalanced stereo audio signals. It takes one input, provides correct buffering and isolation and distributes the signal to five identical outputs.

More specifically, the **VM-5ARII** features:

- High bandwidth 360MHz (-3dB)
- 1 composite video input and 5 outputs on BNC connectors
- 1 unbalanced stereo input and 5 outputs on RCA connectors
- Looping input
- Selectable input signal termination
- Video level and equalization, and audio level controls
- Video AC/DC coupling detection
- Standard 19" 1U rack mount size

3.2   The VM-20ARII 1:20 Programmable Video Audio Distributor

The **VM-20ARII** is a multi-format, high-performance distribution amplifier that can be configured for composite or SDI video and unbalanced stereo audio signals. It can be configured as a 1:10 distribution amplifier for s-Video (Y/C) signals or a 1:5 distribution amplifier for RGBS signals, both with unbalanced stereo audio.

More specifically, the **VM-20ARII** features:

- High bandwidth of 430MHz (-3dB)
- 1 video input and 20 outputs on BNC connectors
- 1 unbalanced stereo input and 20 outputs on RCA connectors
- Looped input capability
- Grouped audio level control
- Selectable input signal termination

- Audio level and video level and equalization controls
- Video AC/DC coupling selection
- Standard 19" 2U rack mount size

3.3 The VM-1411 1:10 Video/Audio Distributor

The **VM-1411** is a dual mode distribution amplifier for composite video and balanced stereo audio signals. It can be configured as a 1:5 distribution amplifier for s-Video (Y/C) signals with balanced stereo audio.

More specifically, the **VM-1411** features:
- Dual mode configuration as a 1:10 (composite) or 1:5 (s-Video) DA
- Grouped audio level controls
- Level (gain) and EQ (peaking) controls
- Looping input
- Selectable input signal termination
- Video AC/DC coupling selection
- Standard 19" 1U rack mount size

4 Your Distributors

This section defines your:
- **VM-5ARII** *Video Audio Distribution Amplifier*, see section 4.1
- **VM-20ARII** *1:20 Programmable Video Audio Distributor*, see section 4.2
- **VM-1411** *1:10 Video/Audio Distributor*, see section 4.3

4.1 Your VM-5ARII Video Audio Distribution Amplifier

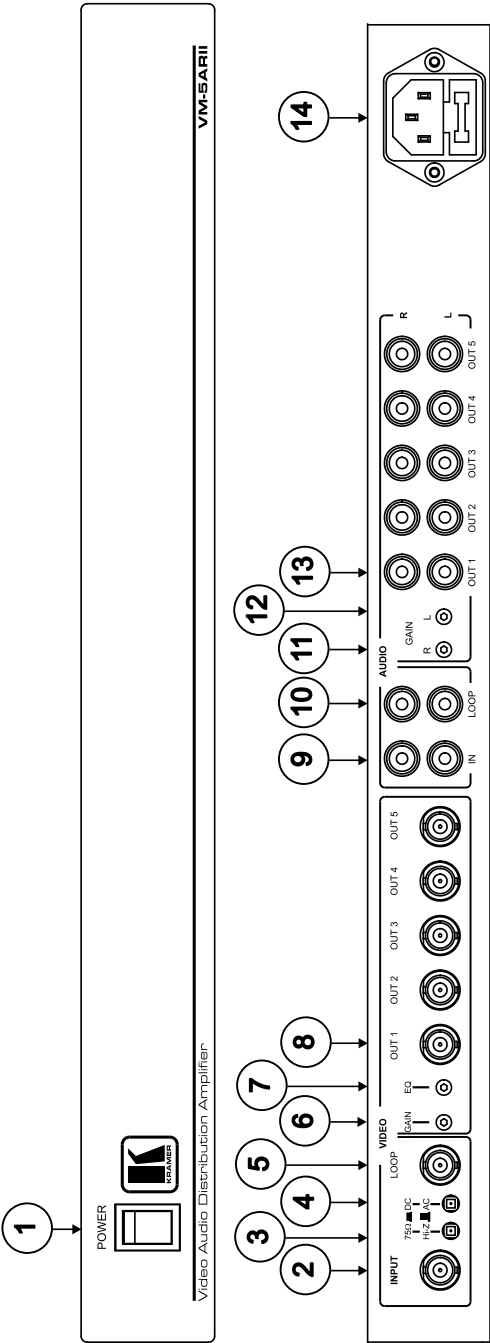*Figure 1* and *Table 1* define the **VM-5ARII**.

Figure 1: VM-5ARII Video Audio Distribution Amplifier

Table 1: VM-5ARII Video Audio Distribution Amplifier Features

#	Feature	Function
1	Illuminated Power Switch	Illuminated switch for turning the unit ON or OFF
2	*VIDEO IN* BNC Connector	Connects to the video source
3	*75Ω/Hi-Z* Pushbutton	Press in for input 75Ω termination, release for no termination
4	*DC/AC* Pushbutton	Press in for DC coupling, release for AC coupling
5	*VIDEO LOOP* BNC Connector	Connects to a display
6	*VIDEO GAIN* Control	Adjusts the video gain level
7	*VIDEO EQ.* Control	Adjusts the cable compensation equalization level
8	*VIDEO OUT* BNC Connectors	Connects to the video acceptor (from 1 to 5)
9	*AUDIO IN* RCA Connectors (L and R)	Connects to the L and R channels of the audio source
10	*AUDIO LOOP* RCA Connectors (L and R)	Connects to an audio acceptor
11	*AUDIO GAIN R*	Controls the volume on the right audio channel
12	*AUDIO GAIN L*	Controls the volume on the left audio channel
13	*AUDIO OUT* RCA RCA Connectors (L and R)	Connects to the audio acceptors (from 1 to 5)
14	Power Connector with Fuse	AC connector for supplying power to the unit

4.2 Your VM-20ARII 1:20 Programmable Video Audio Distributor

Figure 2, *Figure 3*, *Table 2* and *Table 3* define the **VM-20ARII**.
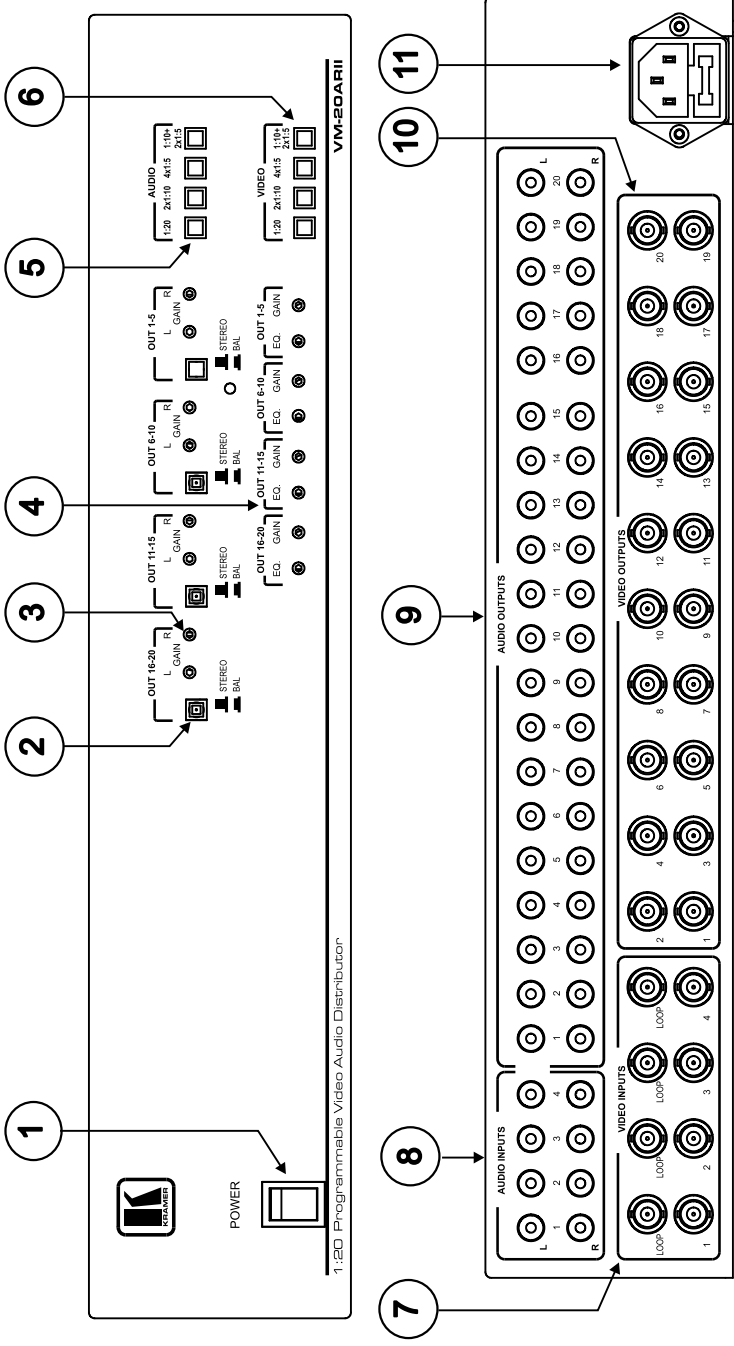
Your Distributors

Figure 2: VM-20ARII 1:20 Programmable Video Audio Distributor

Table 2: VM-20ARII 1:20 Programmable Video Audio Distributor Features

#	Feature	Function
1	Illuminated Power Switch	Illuminated switch for turning the unit ON or OFF
2	STEREO/BAL pushbuttons	Select stereo or balanced mode of operation (pushed=balanced).
3	OUT 1-20 (L, R) audio GAIN trimmers	Controls audio level of outputs 1 to 20
4	OUT 1-20 EQ. and GAIN trimmers	Control video level and cable equalization of outputs 1 to 20.
5	*1:20, 2x1:10, 4x1:5, 1:10+2x1:5 AUDIO Operating Mode Switches*	Programming switches for audio mode of operation as follows: 1:20 – Splits input "1" to all 20 outputs 2x1:10 – Splits input "1" to outputs "1-10" and input "3" to outputs "11-20". 4x1:5 – Splits four inputs to four consecutive sets of five outputs each. 1:10+2x1:5 – Splits input "1" to outputs "1-10", input "3" to outputs "11-15" and input "4" to outputs "16-20"
6	*1:20, 2x1:10, 4x1:5, 1:10+2x1:5 VIDEO Operating Mode Switches*	Programming switches for video mode of operation as follows: 1:20 – Splits input "1" to all 20 outputs. 2x1:10 – Splits input "1" to outputs "1-10" and input "3" to outputs "11-20". 4x1:5 – Splits four inputs to four consecutive sets of five outputs each. 1:10+2x1:5 – Splits input "1" to outputs "1-10", input "3" to outputs "11-15" and input "4" to outputs "16-20"
7	*VIDEO INPUTS* (1-4) and LOOP (1-4) BNC Connectors	Connect to the video sources and input loops
8	*AUDIO IN* (L and R) (1-4) RCA Connectors	Connect to the L and R channels of the audio source
9	*AUDIO OUT* (L and R) (1-20) RCA Connectors	Connect to the audio acceptors (from 1 to 20)
10	*VIDEO OUTPUTS* (1-20) BNC Connectors	Connect to the video acceptors (from 1 to 20)
11	Power Connector with Fuse	AC connector for supplying power to the unit

#	Feature	Function
12	*TERM/75Ω* Switches (IN1-IN4)	Select 75Ω for termination (up) or HI-Z for looping (down)
13	*AC/DC* Switches (IN1-IN4)	Select DC (up) or AC (down) coupling

Table 3: VM-20ARII Underside Features

Figure 3: VM-20ARII Underside

4.3   Your VM-1411 1:10 Video/Audio Distributor

Figure 4 and *Table 4* define the **VM-1411**.
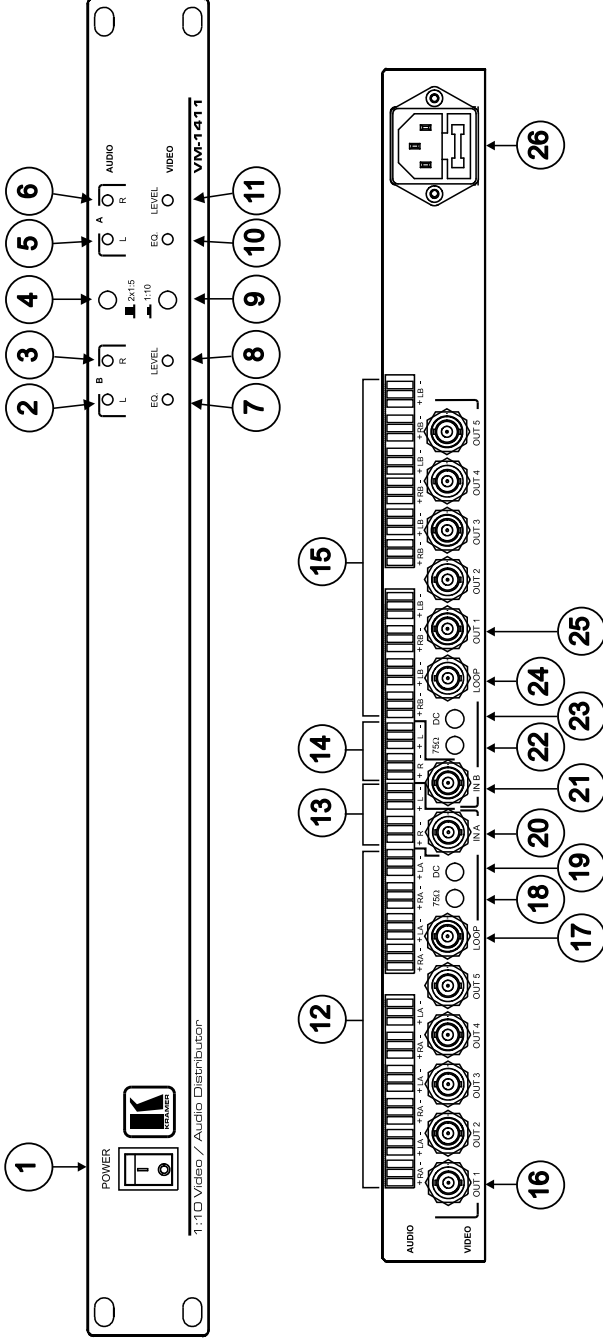
Figure 4: VM-1411 1:10 Video/Audio Distributor

Table 4: VM-1411 Features

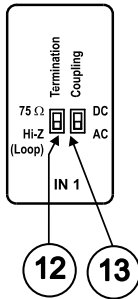| #	Feature	Function
1	Illuminated Power Switch	Illuminated switch for turning the unit ON or OFF
2	*L* AUDIO Trimmer (B)	Controls audio level of left channel B
3	*R* AUDIO Trimmer (B)	Controls audio level of right channel B
4	AUDIO MODE (*2 x 1:5, 1:10*) Pushbutton	Selects either 1:10 or 2 x 1:5 audio operation: 1:10 position (pressed) – splits input "A" to all 10 outputs 2 x 1:5 position (released) – splits inputs "A" and "B" to outputs "A" (1-5) and "B" (1-5) respectively.
5	*L* AUDIO Trimmer (A)	Controls audio level of left channel A
6	*R* AUDIO Trimmer (A)	Controls audio level of right channel A
7	*EQ* Trimmer (B)	Controls cable equalization of channel B video outputs
8	*LEVEL* Trimmer (B)	Controls video level of channel B video outputs
9	VIDEO MODE (*2 x 1:5, 1:10*) Pushbutton	Selects either 1:10 or 2 x 1:5 video operation: 1:10 position (pressed)- splits input "A" to all 10 outputs 2 x 1:5 position (released)- splits inputs "A" and "B" to outputs "A" (1-5) and "B" (1-5) respectively
10	*EQ* Trimmer (A)	Controls cable equalization of channel A video outputs
11	*LEVEL* Trimmer (A)	Controls video level of channel A video outputs
12	5 *AUDIO* outputs *LA, RA* Terminal Block Connectors	Connect to audio acceptors A (1 to 5): LA to the left, RA to the right
13	*L, R* Terminal Block Connectors	Connects to audio input source A
14	*L, R* Terminal Block Connectors	Connects to audio input source B
15	5 AUDIO outputs LB, *RB* Terminal Block Connectors	Connect to audio acceptors B (1 to 5): LB to the left, RB to the right
16	*OUT 1–5* BNC Connectors	Connect to channel A video acceptors (1 to 5)
17	*LOOP* BNC Connector	Connect to video acceptor or display
18	Channel A *75Ω* Pushbutton	Press for 75Ω termination on channel A, release for looping Hi-z
19	Channel A *DC* Pushbutton	Press for DC coupling, release for AC coupling
20	*IN A* BNC Connector	Connects to video input source A
21	*IN B* BNC Connector	Connects to video input source B
22	Channel B *75Ω* Pushbutton	Press for 75Ω termination on channel B, release for looping Hi-z
23	Channel B *DC* Pushbutton	Press for DC coupling, release for AC coupling
24	*LOOP* BNC Connector	Connect to video acceptor or display
25	*OUT 1–5* BNC Connectors	Connect to channel B video acceptors (1 to 5)
26	Power Connector with Fuse	AC connector for supplying power to the unit

5 Installing the VM-20ARII in a Rack

This section describes how to install the **VM-20ARII** in a rack.

Before Installing in a rack

Before installing in a rack, be sure that the environment is within the recommended range:

|	
Operating temperature range	+5º to +45º C (41º to 113º F)
Operating humidity range	10 to 90% RHL, non-condensing
Storage temperature range	-20º to +70º C (-4º to 158º F)
Storage humidity range	5 to 95% RHL, non-condensing

⚠️ **CAUTION!!**

When installing on a 19" rack, avoid hazards by taking care that:

1. It is located within the recommended environmental conditions, as the operating ambient temperature of a closed or multi unit rack assembly may exceed the room ambient temperature.
2. Once rack mounted, enough air will still flow around the machine.
3. The machine is placed straight in the correct horizontal position.
4. You do not overload the circuit(s). When connecting the machine to the supply circuit, overloading the circuits might have a detrimental effect on overcurrent protection and supply wiring. Refer to the appropriate nameplate ratings for information. For example, for fuse replacement, see the value printed on the product label.
5. The machine is earthed (grounded) in a reliable way and is connected only to an electricity socket with grounding. Pay particular attention to situations where electricity is supplied indirectly (when the power cord is not plugged directly into the socket in the wall), for example, when using an extension cable or a power strip, and that you use only the power cord that is supplied with the machine.

How to Rack Mount

To rack-mount a machine:

1. Attach both ear brackets to the machine. To do so, remove the screws from each side of the machine (5 on each side), and replace those screws through the ear brackets.
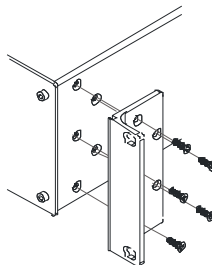
2. Place the ears of the machine against the rack rails, and insert the proper screws (not provided) through each of the four holes in the rack ears.

Note that:

- **In some models, the front panel may feature built-in rack ears**
- Detachable rack ears can be removed for desktop use
- Always mount the machine in the rack before you attach any cables or connect the machine to the power
- If you are using a Kramer rack adapter kit (for a machine that is not 19"), see the Rack Adapters user manual for installation instructions (you can download it at: http://www.kramerelectronics.com)

6 Connecting the Distribution Amplifiers

This section describes how to connect the:

- **VM-5ARII** *Video Audio Distribution Amplifier*, see section 6.1
- **VM-20ARII** *1:20 Programmable Video Audio Distributor*, see section 6.2
- **VM-1411** *1:10 Video/Audio Distributor*, see section 6.3

6.1 Connecting the VM-5ARII Video Audio Distribution Amplifier

To connect the **VM-5ARII**, as shown in the example in *Figure 5*, do the following[1]:

1. Connect the input video source (for example, a composite video player) to the VIDEO INPUT BNC connector.

2. Connect the input audio source (for example, the audio from a composite video player) to the AUDIO IN RCA connectors noting the right and left channels.

3. Connect the VIDEO OUT 1 to 5 BNC connectors to up to 5 acceptors[2] (for example, composite video recorders).

4. Connect the AUDIO OUT 1 to 5 RCA connectors to up to 5 acceptors[2] (for example, the audio input on the composite video recorders).

5. If needed, connect the VIDEO LOOP BNC connector to an acceptor (for example, a composite video display or another **VM-5ARII**) and set the termination pushbutton to 75Ω.

6. Connect the power cord[3] to the unit (not shown in the illustration) and then to the mains electricity. Switch on the power.

7. If needed, adjust the VIDEO GAIN or EQ controls or the AUDIO GAIN on the front panel.

---

1 Switch OFF the power on each device before connecting it to your VM-5ARII. After connecting, switch on the VM-5ARII power and then switch on the power on each device

2 You are not required to connect two acceptors

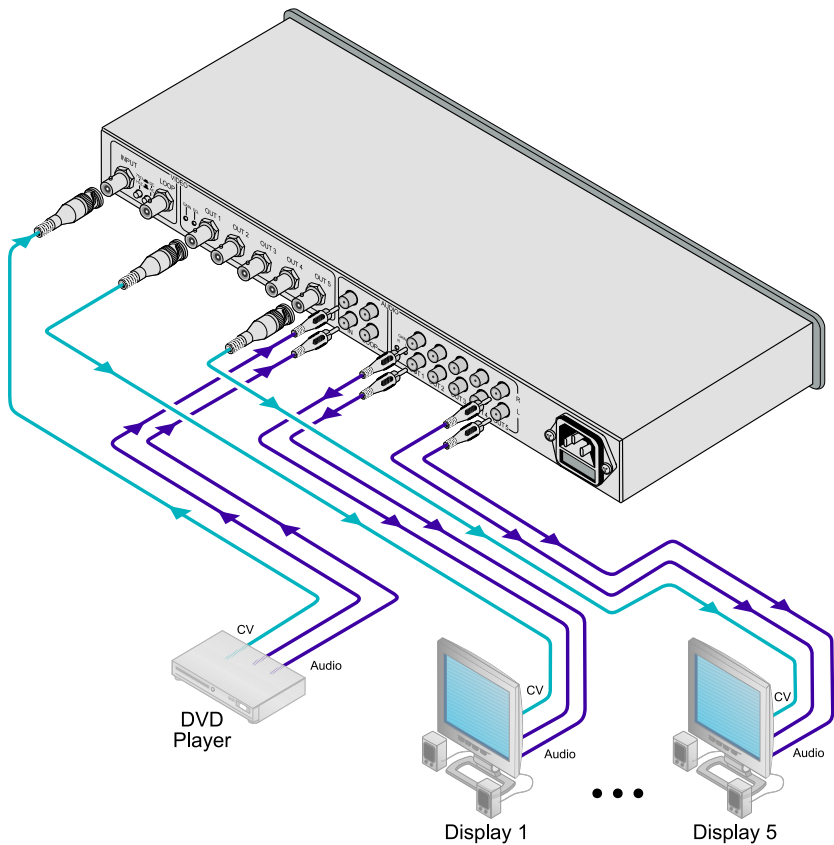3 Use the power cord supplied with the unit

Figure 5: Connecting the VM-5ARII

6.2   Connecting the VM-20ARII Video Audio Distributor

To connect the **VM-20ARII**, as shown in the example in *Figure 6*, do the following[1]:

1. Connect up to 4 input video sources (for example, composite video players) to the VIDEO INPUTS 1 to 4 BNC connectors.

2. Connect up to 4 input audio sources (for example, the audio from the video players) to the AUDIO INPUTS RCA connectors 1 to 4 noting the right and left channels.

3. Connect the VIDEO OUT 1 to 20 BNC connectors to up to 20 acceptors[2] (for example, composite video recorders).

4. Connect the AUDIO OUT 1 and 20 RCA connectors to up to 20 acceptors[2] (for example, the audio input on the video recorders).

5. If needed, connect the VIDEO LOOP BNC connector to an acceptor (for example, a composite video display or another **VM-20ARII**) and set the termination pushbutton to 75Ω.

6. Connect the power cord[3] to the unit (not shown in the illustration) and then to the mains electricity. Switch on the power.

7. If needed, adjust the VIDEO GAIN or EQ controls or the AUDIO GAIN on the front panel.

8. Set the mode of operation by pressing one of the operating mode control switches (one set for audio and one set for video) as follows:

   - Press the 1:20 switch to split input "1" to all 20 outputs

   - Press the 2x1:10 switch to split input "1" to outputs "1-10" and input "3" to outputs "11-20"

   - Press the 4x1:5 switch to split four inputs to four consecutive sets of five outputs each

   - Press the 1:10+2x1:5 switch to split input "1" to outputs "1-10", input "3" to outputs "11-15" and input "4" to outputs "16-20"

---

1 Switch OFF the power on each device before connecting it to your VM-20ARII. After connecting, switch on the VM-20ARII power and then switch on the power on each device

2 You are not required to connect all the acceptors

3 Use the power cord supplied with the unit

Audio

CV

DVD
Player

Audio

CV

Display 1

● ● ●

CV

Audio

Display 20
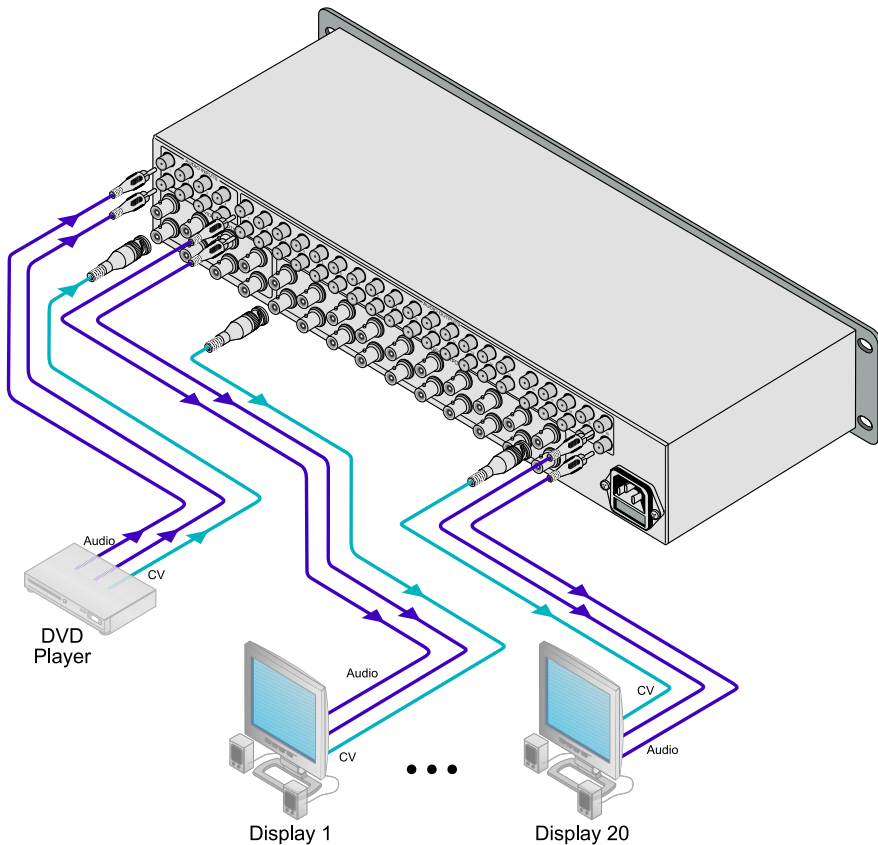
Figure 6: Connecting the VM-20ARII

6.3 Connecting the VM-1411 1:10 Video/Audio Distributor

To connect the **VM-1411**, as shown in the example in *Figure 7*, do the following[1]:

1. Connect up to 2 input video sources (for example, composite video players) to the VIDEO IN A and VIDEO IN B BNC connectors.

2. Connect up to 2 input audio sources (for example, the audio from the composite video players) to the L and R terminal block connectors associated with IN A and IN B.

3. Connect the VIDEO OUT 1 to 5 BNC connectors to up to 5 acceptors[2] (for example, composite video recorders) on channels A and B.

4. Connect the AUDIO OUT 1 to 5 L and R terminal block connectors to up to 5 acceptors[2] (for example, the audio input on the video recorders) on channels A and B.

5. If needed, connect the VIDEO LOOP BNC connector for each channel to an acceptor (for example, a composite video display or another **VM-1411**) and set the termination pushbutton to 75Ω for each connected channel. Set AC or DC coupling as needed.

6. Connect the power cord[3] to the unit (not shown in the illustration) and then to the mains electricity. Switch on the power.

7. If needed, adjust the VIDEO GAIN or EQ controls or the AUDIO GAIN on the front panel.

8. Set the mode of operation by pressing one of the operating mode control switches as follows:

   - Press the 2x1:5/1:10 switch to split input "A" to all 10 outputs
   - Release the 2x1:5/1:10 switch to split inputs "A" and "B" to outputs sets "A" and "B" respectively.

---

1 Switch OFF the power on each device before connecting it to your VM-1411. After connecting, switch on the VM-1411 power and then switch on the power on each device

2 You are not required to connect all the acceptors
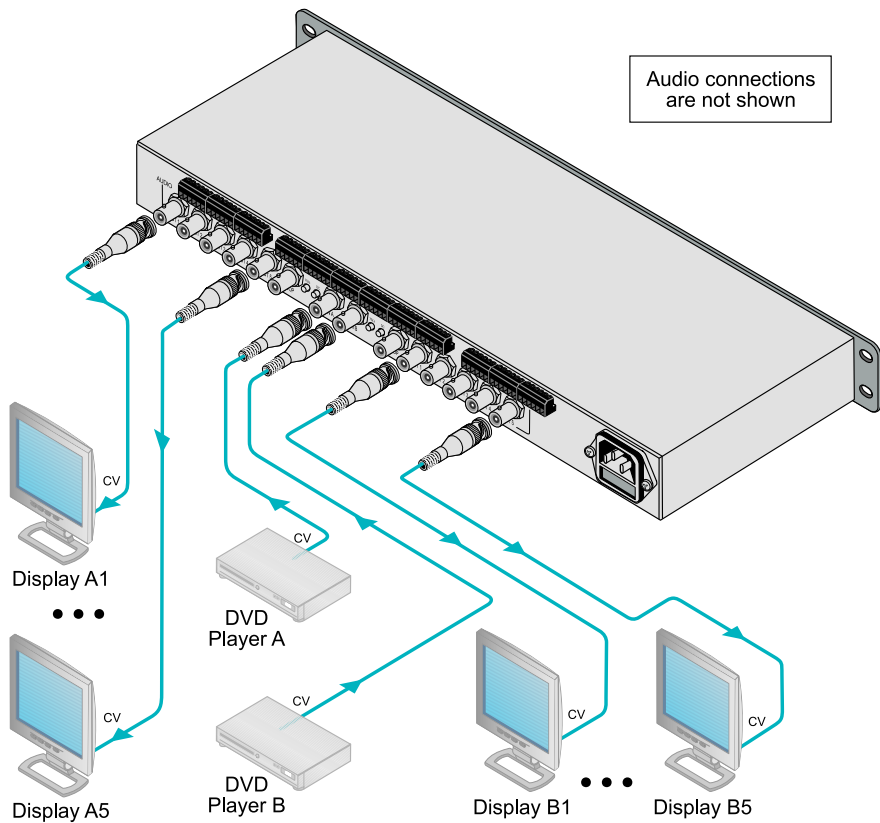
3 Use the power cord supplied with the unit

Audio connections are not shown

Figure 7: Connecting the VM-1411

7 Technical Specifications

The technical specifications[1] of the distribution amplifiers are shown in *Table 5*, *Table 6*, and *Table 7*:

Table 5: VM-5ARII Technical Specifications

INPUT:	1 video, composite or single component, looping, 1Vpp/75Ω on BNC connectors with termination switch; 1 audio stereo looping, +4dBu/50kΩ on RCA connectors
OUTPUT:	5 video, composite or single component, 1 Vpp/75Ω on BNC connectors; 5 audio stereo, +4dBu/150Ω, on RCA connectors
MAX. OUTPUT:	Video: 2.2Vpp; Audio: 27Vpp
VIDEO BANDWIDTH (-3dB):	360MHz
AUDIO BANDWIDTH (-3dB):	60kHz
DIFF. GAIN:	0.03%
DIFF. PHASE:	0.06Deg
K-FACTOR:	0.05%
VIDEO S/N RATIO:	76dB
AUDIO S/N RATIO:	85dB
AUDIO THD:	0.021% (1V, 1kHz.)
CONTROL:	Video gain: -1 to +1.8dB; audio gain: -40 to +6dB; EQ.: 0 to +2.5dB, audio: 0.2 to +6dB.
COUPLING:	DC/AC selectable (video), AC (audio.)
POWER SOURCE:	230V AC, 50/60Hz, (115V U.S.A.) 21VA.
DIMENSIONS:	19" x 7" x 1U W, D, H, rack mountable.
WEIGHT:	1.94kg (4.3lbs) approx.
ACCESORIES:	Power cord.

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1 Specifications are subject to change without notice

Table 6: VM-20ARII Technical Specifications

INPUT:	4 video looping, 1Vpp/75Ω on BNC connectors with termination switches; 4 audio stereo (or balanced mono) +4dBu/50kΩ, on RCA connectors
OUTPUT:	Video: 20 (1:20, 2x1:10, 4x1:5, 1:10, 2x1:5) 1Vpp/75Ω on BNC connectors; Audio: 20 (1:20, 2x1:10, 4x1:5, 1:10, 2x1:5) stereo or balanced mono, +4dBu/50Ω, on RCA connectors
VIDEO BANDWIDTH (-3dB):	430MHz
AUDIO BANDWIDTH (-3dB):	110kHz
DIFF. GAIN:	0.06%
DIFF. PHASE:	0.08Deg
VIDEO S/N RATIO:	76dB
AUDIO S/N RATIO:	80dB
VIDEO CONTROL:	-1.2/+1.7dB level, 0/+2.4dB EQ
AUDIO CONTROL:	+0.3/+6.2dB
VIDEO COUPLING:	DC/AC user selectable
AUDIO COUPLING:	AC (input), DC (output)
AUDIO THD+NOISE:	0.02%
2nd HARMONIC:	0.002%
POWER SOURCE:	Universal switching power supply: 100-240 VAC, 50/60Hz 18.5VA
DIMENSIONS:	19" x 7" x 2U W, D, H, rack mountable
WEIGHT:	3.6kg (8lbs) approx
ACCESORIES:	Power cord

Table 7: VM-1411 Technical Specifications

INPUT:	2 composite/single component video, looping, 1Vpp/75Ω on BNC connectors with termination switch; 2 balanced audio stereo up to +4dBu/50kΩ on detachable terminal blocks
OUTPUT:	2x5 composite/single component video, 1Vpp/75Ω on BNCs; 2x5 balanced audio stereo 4dBu/50Ω, on detachable terminal blocks
MAX. OUTPUT:	Video: 1.8Vpp; Audio: +24dBu
VIDEO BANDWIDTH (-3dB):	240MHz
AUDIO BANDWIDTH (-3dB):	60kHz
DIFF. GAIN:	0.2%
DIFF. PHASE:	0.2Deg
K-FACTOR:	0.05%
VIDEO S/N RATIO:	77dB
AUDIO S/N RATIO:	Better than 87dB @1Vpp
CONTROL:	Front accessible trimmers for video gain and EQ. and for audio L and R levels
COUPLING:	DC or AC (video); AC (audio)
AUDIO THD:	0.02%
POWER SOURCE:	230V AC 50/60Hz (115V U.S.A.) 19.5VA
DIMENSIONS:	19" x 7" x 1U W, D, H, rack mountable
WEIGHT:	2.9kg (6.4lbs) approx
ACCESORIES:	Power cord
OPTIONS :	Kramer 3.5mm to IR Emitter Control Cable (C-A35/IRE-10); Kramer 3.5mm to Dual IR Emitter Control Cable (C-A35/2IRE- 10); 15 meter and 20 meter IR emitter extension cables

LIMITED WARRANTY

Kramer Electronics (hereafter *Kramer*) warrants this product free from defects in material and workmanship under the following terms.

HOW LONG IS THE WARRANTY

Labor and parts are warranted for seven years from the date of the first customer purchase.

WHO IS PROTECTED?

Only the first purchase customer may enforce this warranty.

WHAT IS COVERED AND WHAT IS NOT COVERED

Except as below, this warranty covers all defects in material or workmanship in this product. The following are not covered by the warranty:

1. Any product which is not distributed by Kramer, or which is not purchased from an authorized Kramer dealer. If you are uncertain as to whether a dealer is authorized, please contact Kramer at one of the agents listed in the Web site www.kramerelectronics.com.

2. Any product, on which the serial number has been defaced, modified or removed, or on which the WARRANTY VOID IF TAMPERED sticker has been torn, reattached, removed or otherwise interfered with.

3. Damage, deterioration or malfunction resulting from:
   i) Accident, misuse, abuse, neglect, fire, water, lightning or other acts of nature
   ii) Product modification, or failure to follow instructions supplied with the product
   iii) Repair or attempted repair by anyone not authorized by Kramer
   iv) Any shipment of the product (claims must be presented to the carrier)
   v) Removal or installation of the product
   vi) Any other cause, which does not relate to a product defect
   vii) Cartons, equipment enclosures, cables or accessories used in conjunction with the product

WHAT WE WILL PAY FOR AND WHAT WE WILL NOT PAY FOR

We will pay labor and material expenses for covered items. We will not pay for the following:

1. Removal or installations charges.

2. Costs of initial technical adjustments (set-up), including adjustment of user controls or programming. These costs are the responsibility of the Kramer dealer from whom the product was purchased.

3. Shipping charges.

HOW YOU CAN GET WARRANTY SERVICE

1. To obtain service on you product, you must take or ship it prepaid to any authorized Kramer service center.

2. Whenever warranty service is required, the original dated invoice (or a copy) must be presented as proof of warranty coverage, and should be included in any shipment of the product. Please also include in any mailing a contact name, company, address, and a description of the problem(s).

3. For the name of the nearest Kramer authorized service center, consult your authorized dealer.

LIMITATION OF IMPLIED WARRANTIES

All implied warranties, including warranties of merchantability and fitness for a particular purpose, are limited in duration to the length of this warranty.

EXCLUSION OF DAMAGES

The liability of Kramer for any effective products is limited to the repair or replacement of the product at our option. Kramer shall not be liable for:

1. Damage to other property caused by defects in this product, damages based upon inconvenience, loss of use of the product, loss of time, commercial loss; or:

2. Any other damages, whether incidental, consequential or otherwise. Some countries may not allow limitations on how long an implied warranty lasts and/or do not allow the exclusion or limitation of incidental or consequential damages, so the above limitations and exclusions may not apply to you.

This warranty gives you specific legal rights, and you may also have other rights, which vary from place to place.

NOTE: All products returned to Kramer for service must have prior approval. This may be obtained from your dealer.

This equipment has been tested to determine compliance with the requirements of:

EN-50081:	"Electromagnetic compatibility (EMC);
	generic emission standard.
	Part 1: Residential, commercial and light industry"
EN-50082:	"Electromagnetic compatibility (EMC) generic immunity standard.
	Part 1: Residential, commercial and light industry environment".
CFR-47:	FCC* Rules and Regulations:
	Part 15: "Radio frequency devices
	Subpart B Unintentional radiators"

CAUTION!

⊠ Servicing the machines can only be done by an authorized Kramer technician. Any user who makes changes or modifications to the unit without the expressed approval of the manufacturer will void user authority to operate the equipment.

⊠ Use the supplied DC power supply to feed power to the machine.

⊠ Please use recommended interconnection cables to connect the machine to other components.

* FCC and CE approved using STP cable (for twisted pair products)

For the latest information on our products and a list of Kramer
distributors, visit our Web site: www.kramerelectronics.com
where updates to this user manual may be found.
We welcome your questions, comments and feedback.

Safety Warning:
Disconnect the unit from the power supply before
opening/servicing.

Caution

ISO 9001:2000
IQC
Institute of
Quality & Control
Certified Quality System

C E